



APPEAL NO:

In Re Application of:

Morehouse

Serial No. 09/726,325

Filed: December 01, 2000

For: ELECTRONIC INK BALL POINT PEN WITH MEMORY

APPELLANTS' BRIEF

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Date: December 14, 2004

Morehouse

Serial No.:09/726,325

Group Art Unit: 2673

Filed: December 1, 2000

Examiner: Lewes, David Lee

For: ELECTRONIC INK BALL POINT PEN WITH MEMORY

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

APPELLANTS' BRIEF ON APPEAL

Sir:

Appellants herein file an Appeal Brief drafted in accordance with the provisions of 37 C.F.R. § 1.192(c) as follows:

I. REAL PARTY IN INTEREST

Appellants respectfully submit that the above-captioned application is assigned, in its entirety to Hewlett Packard, having an address as shown below.

II. RELATED APPEALS AND INTERFERENCES

Appellants state that, upon information and belief, they are not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have a bearing on

the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-3, 5-13 and 15-23 are pending in the present Application. Application Serial No. 09/726,325 (the instant application) as originally filed included claims 1-20. Claims 4 and 14 were previously canceled. Claims 21-23 were later added by amendment. Claims 1-3, 5-13 and 15-23 are on appeal and all applied rejections concerning Claims 1-3, 5-13 and 15-23 are being appealed herein.

IV. STATUS OF AMENDMENT

The response to the Office Action was considered in the Final Office Action dated April 21, 2004. The response is not entered with the filing of this Appeal Brief.

V. SUMMARY OF THE INVENTION

The present invention includes an electronic pen that records motion data relating to the use of the pen. It includes a pen body and a ball mounted in the pen body. A sensor in the pen body, located proximate the ball, detects motion of the ball and converts the motion into corresponding electronic signals. A memory in the pen body, electronically coupled to the sensor, receives the electronic signals and stores corresponding data related to the motion.

Another aspect of the invention includes a method for recording data using an electronic pen. The method includes detecting motion of a ball in the pen using a sensor and converting the

motion into corresponding electronic signals. The electronic signals are received and used to store in a memory corresponding data related to the motion of the pen.

VI. ISSUES

The issues presented are:

- (1) whether claims 1-3, 5-13 and 15-23 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,486,875 ("O'Donnell, Jr.") in view of Schiller et al. (2002/0031243) and Stevenson et al. (2002/0054026).
- (2) whether claims 1-3, 5-13 and 15-23 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,130,666 ("Persidsky") in view of Amano (5691747) and O'Conner et al. (6188392).

VII. GROUPING OF CLAIMS

Appellants hereby state that Claims 1-3, 5-13 and 15-23 form a single group.

VIII. ARGUMENTS

A. Examiner's Burden

When making an obvious rejection under 35 U.S.C. § 103, a necessary condition is that the combination of the cited references must teach or suggest all claim limitations. If the cited references do not teach or suggest every element of the claimed invention, then the cited references fail to render obvious the claimed invention, i.e. the claimed invention is distinguishable over the combination of the cited references.

Additionally, for reference structures to be properly combined and thereby render a claimed invention obvious, there must be some motivation for the combination i.e. there must be some teaching, suggestion, or incentive to make the combination claimed by the Appellant.

Northern Telecom, Inc. v. Datapoint Corp. 15 USPQ2d 1321, 1323 (CAFC 1990). **Motivation coming from the Appellant's own disclosure is not sufficient.** Nor is it sufficient that those of ordinary skill in the art had the capability to combine the referenced structure or understood the advantages of the combination. Although an Examiner may suggest that the structure of a primary prior art reference *could* be modified in view of a secondary prior art reference to form the claimed structure, the mere fact that the prior art *could* be so modified does not make the modification obvious ***unless the prior art suggested the desirability of the modification.*** *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (CAFC 1989). (Emphasis added.)

B. Summary of the Applied Rejections

In the final Office Action, dated April 21, 2004, Claims 1-3, 5-13 and 15-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,486,875 ("O'Donnell, Jr.") in view of Schiller et al. (2002/0031243) and Stevenson et al. (2002/0054026). In particular, the Examiner stated:

O'Donnell Jr. teaches of an electronic pen for recording motion data relating to use of the pen, figures 1 and 2, comprising a pen body, figure 1 item 3; a ball mounted in the pen body, figure 1 item 15; a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals figure 1 item 17 column 4 lines 1-15; and a memory in the pen body, electronically coupled to the sensor, for receiving the electronic signals and storing corresponding data related to the motion, figure 1 item 25, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball, column 4 lines 1-30, a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding transmission of the corresponding electronic signal from the sensor to the memory, figure 1 item 23.

However, O'Donnell, Jr teaches however that microprocessor 23 is programmed to achieve simultaneous data capture as a document is created with the pen and provide real time or delayed transmission to the associated computer, column 4 lines 12-15 further that the memory can be associated with date and time clocks column 4 lines 32-35. Said feature comprising a timer and sampling at a particular rate is inherent to the microprocessor taught by O'Donnell, Jr. as known in the prior art....

O'Donnell Jr. teaches of an electronic pen for recording motion data relating to use of the pen, figures 1 and 2, comprising a pen body, figure 1 item 3; a ball mounted in the pen body, figure 1 item 15; a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals figure 1 item 17 column 4 lines 1-15; and a memory in the pen body, electronically coupled to the

sensor, for receiving the electronic signals and storing corresponding data related to the motion, figure 1 item 25, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball, column 4 lines 1-30, a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding transmission of the corresponding electronic signal from the sensor to the memory, figure 1 item 23.

As in claim 11, O'Donnell, Jr. teaches of a method for recording motion data relating to use of pen having a pen body, figure 1 item 3, a ball mounted in the pen body, figure 1 item 15, a memory, figure 1 item 25, and a sensor located proximate the ball, figure 1 item 17, comprising: detecting motion of the ball using the sensor, column 4 lines 1-30, sampling the sensor at a particular rate using a circuit electronically coupled to the sensor and to the memory, figure 1 item 23; converting the motion into corresponding electronic signals, column 4 lines 1-30; receiving the electronic signals, column 4 lines 1-30; and storing in memory; column 4 lines 1-31, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball, column 4 lines 1-30. However, O'Donnell Jr. is silent as to wherein the circuit including a timer for determining the particular rate at which the sensor is sampled...

Said feature comprising a timer and sampling at a particular rate is inherent to the microprocessor taught by O'Donnell Jr. as known in the art. Amano teaches of a timer, figure 2 item 15 for sampling data from a ball based input device, column 13 lines 1-30, wherein the timer is used also adjusted by the processor for variable timing...

Further, in the Final Office Action, claims 1, 3, 5-13 and 15-23 were rejected under 35

U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,130,666 ("Persidsky") in view of Amano (5691747) and O'Conner et al. (6188392). The Examiner stated:

As in claims 1 and 11, Presidsky teaches of an electronic pen for recording motion data relating to use of the pen, figures 1-4, a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals column 4 lines 28-41; and a memory in the pen body, electronically coupled to the sensor, for receiving the electronic signals and storing corresponding data related to the motion, figure 1 item 22, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball, column 4 lines 1-20. However, Presidsky is silent as to said timer and sampling at a particular rate....

Amano teaches of a timer, figure 2 item 15 for sampling data from a ball based input device, column 13 lines 1-30, wherein the timer is used also adjusted by the processor for variable timing. O'Conner et al. teaches of a processor 118 managing conversion of data, including sampling of the data, by conversion device 116, wherein the processor 118 also manages the flow of information to and from memory 120, wherein given said sampling feature, a clock sampling at a particular rate is inherent...Both Amano and O'Conner et al. support what would be obvious to the skilled artisan at the time of the invention that Presidsky includes a timing mechanism internal as taught by Amano or external as taught by O'Conner et al. for the purpose of sampling data at a particular rate, because said feature are known to be inherent features for transferring data from an analog to digital converter to a microprocessor, as taught by Presidsky, Amano and O'Conner et al., as found in claims 1 and 11.

Appellants respectfully request that the Board reverse the Examiner's final rejection of

C. The Cited Prior Art

U.S. Patent No. 6,486,875 (O'Donnell, Jr.)

O'Donnell Jr. is directed to a writing instrument that also functions as a computer peripheral. The writing instrument has the general configuration of a ball-point pen. The pen includes a ball for ink writing that is operatively associated with internal sensors that precisely detect the distance and direction of ball movement and relay that directional and distance data to a microprocessor which records a series of vectors similar to a computer mouse. The pen also includes interchangeable memory cartridge for the storage of the data and a wireless computer connect, for example infrared, that can communicate generated or stored data to an associated computer. The pen also includes an external LED data display, a speaker/microphone and an ink reservoir.

US Patent Application 2002/0031243 (Schiller)

According to Schiller, handwriting data is received electronically from a remote user at a handwritten-information server, and the handwriting data is processed in accordance with instructions provided to the server by the user, e.g. by forwarding the handwriting data to a specified destination identified by the user.

US Patent Application 2002/0054026 (Stevenson)

According to Stevenson, a method is provided for recording writing and audio from a writing session in a manner such that a depiction of the writing can be replayed in a synchronized fashion with the audio. The method includes recording movement of a writing element relative to a writing surface during a writing session using a writing capture device which produces writing data corresponding to positions of the writing element relative to the writing surface at sampled points in time; recording audio present during the writing session using an audio capture device to form audio data; associating time stamps with the writing and audio data; forming stroke vector data from the writing data by grouping the writing data into groups of temporally proximate writing data points based on the time stamps associated with the writing data, each group of temporally proximate writing data points defining a stroke vector that reflects a direction and magnitude of movement of the writing element relative to the writing surface over a period of time spanned by the writing data points in the group; and storing the time stamped stroke vector data and time stamped audio data to memory.

US Patent 6,130,666 (Persidsky)

Persidsky discloses a self-contained pen computer which is capable of collecting and recording data representative of handwritten strokes of the pen, and displaying such data in a display screen which is a part of the pen. In the housing of the pen, a pressure sensor is included at the tip of the pen, and a motion sensor which outputs signals describing the motion of the pen, so that handwritten data can be acquired without the need for a special writing surface. These sensors are connected to a signal processing circuit which includes an analog-to-digital converter

to convert motion signals and pressure sensor signals into digital code. A microprocessor or microcontroller interprets the digitized motion data, stores the processed data in a memory such as a chip storage device, directs such data to a built-in display such as an LCD, which can display images in real-time corresponding to the processed motion signals, as well as images stored in memory. This display can be driven directly by the processor or by its own dedicated controller. The pen also includes an energy source, such as a battery or solar panel, to power all circuitry.

US Patent 5,691,747 (Amano)

Amano discloses a compact, miniaturized pointing device for use with an electronic apparatus, such as a computer, personal data assistant (PDA), or digital watch display screen, is provided to indicate the position of a cursor mark on the display screen. The pointing device includes an elastic member which has a body portion that extends above the surface of the electronic apparatus with a section below the surface including pressure sensitive elements and corresponding position indicators. When a finger is placed on the elastic member, vibrational pressures are generated and pressure signals are propagated through the elastic member reaching the pressure sensing elements housed in the submerged section. The intensity of the propagating signal attenuates with a square of the distance traveled and, therefore, from a determination of the ratio of the magnitude the output voltage signals from the pressure sensing elements, the position of the pressed point on the elastic member can be computed. The pointing device computes the coordinates of the pressed point in relation to the projected pressed point on orthogonal axes of a planar surface at the submerged section, and from these coordinates are utilized by circuitry of the electronic apparatus to correspondingly position the cursor mark on

the display screen. A movement of the finger on the elastic member can be translated into a movement vector, and sampling rates are adjusted to follow any velocity rate of the movement vector thereby allowing the screen to accurately reflect the movement of the finger.

US Patent 6,188,392 (O'Conner et al.)

O'Conner discloses a marking device (MD) that includes an elongated housing that has a tip configured to contact a surface. The MD also includes a pressure sensor disposed within the housing. The pressure sensor is coupled to the tip and is configured to detect when the tip contacts the surface. The MD further includes first and second acceleration sensors disposed within the housing and adjacent the tip of the MD. The first and second acceleration sensors are configured to sense acceleration of the tip in first and second directions. Responsive to the sensing of acceleration, first and second acceleration sensors generate a signal indicative of acceleration in first and second directions. The MD also includes a conversion device configured to receive first and second signals and convert first and second signals into at least one computer readable signal

D. Claims 1-3, 5-13 and 15-23 are not unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,486,875 ("O'Donnell, Jr.") in view of Schiller et al. (2002/0031243) and Stevenson et al. (2002/0054026).

For ease of review, Appellant reproduces independent claims 1 and 11 herein below:

1. An electronic pen for recording motion data relating to use of the pen, comprising:

a pen body;

a ball mounted in the pen body;

a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals;

a memory in the pen body, electronically coupled to the sensor, for receiving the electronic signals and storing corresponding data related to the motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball; and

a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding electronic signal from the sensor to the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled.

11. A method for recording motion data relating to use of a pen having a body, a ball mounted in the pen body, a memory, and a sensor located proximate the ball, comprising:

detecting motion of the ball using the sensor; sampling the sensor at a particular rate using a circuit electronically coupled to the sensor and the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled;

converting the motion into corresponding electronic signals;

receiving the electronic signals;

controlling transmission of the electronic signals from the sensor to the memory using the circuit; and

storing in the memory, based upon the electronic signals, corresponding data related to the motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball.

The Examiner asserts that the present invention is obvious based on the O'Donnell Jr. view of Schiller et al. (2002/0031243) and Stevenson et al. (2002/0054026). However, in the Office action dated April 21, 2004, the Examiner references the O'Donnell Jr. reference in view of the Amano and O'Conner references. Accordingly, Appellant presents arguments herein with reference to the O'Donnell Jr. reference in view of the Amano and O'Conner references. In either case, Appellant respectfully disagrees with the Examiners rejection.

When making an obvious rejection under 35 U.S.C. § 103, a necessary condition is that the reference or combination of the cited references ***must teach or suggest all claim limitations***. (Emphasis added.) If the cited reference(s) do not teach or suggest every element of the claimed invention, then the cited reference(s) fail to render obvious the claimed invention, i.e. the claimed invention is distinguishable over the combination of the cited reference(s). Appellant accordingly disagrees with the Examiner's obviousness rejection.

O'Donnell Jr. discloses that a memory cartridge can be encrypted with security codes, data and time clocks and other means ***for security and document authentication***. (col. 4 lines 29-35). The recited invention of claims 1 and 11 include the limitation of a "circuit including a timer for determining the particular rate at which the sensor is sampled". Appellant asserts that the implementation of date and time clocks by a memory cartridge ***for security and document authentication*** is functionally different from a circuit that includes a timer ***for determining the particular rate at which a sensor***

is sampled. Consequently, the implementation of date and time clocks by a memory cartridge for security and document authentication does not teach or suggest the implementation of a circuit that includes a timer for determining the particular rate at which a sensor is sampled. Therefore, the O'Donnell reference does not teach or suggest every limitation of the recited invention of claims 1 and 11.

Additionally, the Examiner also proposes to combine the Amano and O'Conner et al. references with the O'Donnell Jr. reference. Amano discloses a compact, miniaturized pointing device for use with an electronic apparatus, such as a computer, personal data assistant (PDA), or digital watch display screen, is provided to indicate the position of a cursor mark on the display screen. The pointing device includes an elastic member which has a body portion that extends above the surface of the electronic apparatus with a section below the surface including pressure sensitive elements and corresponding position indicators.

O'Conner et al. discloses a marking device. The marking device (MD) includes an elongated housing that has a tip configured to contact a surface. The MD also includes a pressure sensor disposed within the housing. The pressure sensor is coupled to the tip and is configured to detect when the tip contacts the surface. The MD further includes first and second acceleration sensors disposed within the housing and adjacent the tip of the MD. The first and second acceleration sensors are configured to sense acceleration of the tip in first and second directions. Responsive to the sensing of acceleration, first and second acceleration sensors generate a signal indicative of acceleration in first and second directions. The MD also includes a conversion device configured to receive first and second signals and convert first and second signals into at least one computer readable signal.

The Examiner proposes to combine the O'Donnell Jr. reference with the Amano reference or the O'Conner et al. reference because the references purportedly disclose timers that are equivalent to the timer disclosed by the recited invention of claims 1 and 11. Appellant respectfully disagrees with the Examiner's proposed attempt to combine these references.

For reference structures to be properly combined and thereby render a claimed invention obvious, there must be some motivation for the combination i.e. there must be some teaching, suggestion, or incentive to make the combination claimed by the Appellant. *Northern Telecom, Inc. v. Datapoint Corp.* 15 USPQ2d 1321, 1323 (CAFC 1990). Motivation coming from the Appellant's own disclosure is not sufficient. Nor is it sufficient that those of ordinary skill in the art had the capability to combine the referenced structure or understood the advantages of the combination. Although an Examiner may suggest that the structure of a primary prior art reference *could* be modified in view of a secondary prior art reference to form the claimed structure, the mere fact that the prior art *could* be so modified does not make the modification obvious ***unless the prior art suggested the desirability of the modification.*** *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (CAFC 1989). (Emphasis added.)

Here the Examiner is attempting to combine the O'Donnell Jr. reference with the Amano reference or the O'Connor reference based on the disclosed timer of each reference. Appellant asserts the Examiner has provided no motivation, other than the Appellant's own disclosure, to combine the cited references. Appellant further asserts that no such motivation exists. Although O'Donnell could arguably be combined with Amano or O'Conner et al., this modification is not obvious in light of the recited invention since there is no suggested desirability within the O'Donnell Jr. reference to

include a timer for determining the particular rate at which a sensor is sampled as recited in claims 1 and 11 of the present invention.

Consequently, with regard to the O'Donnell Jr. reference alone, since the implementation of date and time clocks by a memory cartridge for security and document authentication, as taught by O'Donnell Jr. does not teach or suggest the implementation of a circuit that includes a timer for determining the particular rate at which a sensor is sampled, as recited in the present invention, the O'Donnell Jr. reference does not teach or suggest every limitation of the recited invention of claims 1 and 11. Claims 1 and 11 are therefore allowable over the obviousness rejection that is based on the O'Donnell Jr. reference alone.

With regard to the Examiner's proposed combination of references, since there is no suggested desirability within the O'Donnell Jr. reference to include a timer for determining the particular rate at which a sensor is sampled as recited in claims 1 and 11, there is no motivation to combine the O'Donnell Jr. reference with either the Amano reference or the O'Conner et al. reference. Claims 1 and 11 are accordingly allowable over the Examiner's obviousness rejections.

Claims 2, 3 and 5-10 and 12, 13 and 15-23

Since claims 2, 3 and 5-10 and 12, 13 and 15-23 are respectively dependent on claims 1 and 11, the above-articulated arguments with regard to claims 1 and 11 apply with equal force to 2, 3 and 5-10 and 12, 13 and 15-23. Accordingly, claims 2, 3 and 5-10 and 12, 13 and 15-23 should be allowed over the Examiner's cited reference.

E. Claims 1-3, 5-13 and 15-23 are not unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,130,666 ("Persidsky") in view of Amano (5691747) and O'Conner et al. (6188392).

The Examiner asserts that the present invention is obvious based on the Persidsky reference in view of Amano and O'Conner et al. Persidsky discloses a self-contained pen computer which is capable of collecting and recording data representative of handwritten strokes of the pen, and displaying such data in a display screen which is a part of the pen. In the housing of the pen, a pressure sensor is included at the tip of the pen, and a motion sensor which outputs signals describing the motion of the pen, so that handwritten data can be acquired without the need for a special writing surface. These sensors are connected to a signal processing circuit which includes an analog-to-digital converter to convert motion signals and pressure sensor signals into digital code. A microprocessor or microcontroller interprets the digitized motion data, stores the processed data in a memory such as a chip storage device, directs such data to a built-in display such as an LCD, which can display images in real-time corresponding to the processed motion signals, as well as images stored in memory. This display can be driven directly by the processor or by its own dedicated controller. The pen also includes an energy source, such as a battery or solar panel, to power all circuitry.

As previously stated, for reference structures to be properly combined and thereby render a claimed invention obvious, there must be some motivation for the combination i.e. there must be some teaching, suggestion, or incentive to make the combination claimed by the Appellant. *Northern Telecom, Inc. v. Datapoint Corp.* 15 USPQ2d 1321, 1323 (CAFC 1990). Motivation coming from the Appellant's own disclosure is not sufficient. Nor is it sufficient that those of ordinary skill in the art had the capability to

combine the referenced structure or understood the advantages of the combination. Although an Examiner may suggest that the structure of a primary prior art reference *could* be modified in view of a secondary prior art reference to form the claimed structure, the mere fact that the prior art *could* be so modified does not make the modification obvious ***unless the prior art suggested the desirability of the modification.*** *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (CAFC 1989). (Emphasis added.)

Here the Examiner is attempting to combine Persidsky with the Amano reference or the O'Connor reference based on the disclosed timer of each reference. Appellant asserts the Examiner has provided no motivation, other than the Appellant's own disclosure, to combine the cited references. Appellant further asserts that no such motivation exists. Although Persidsky could arguably be combined with Amano or O'Conner et al., this modification is not obvious in light of the recited invention since there is no suggested desirability within the Persidsky reference to include a timer for determining the particular rate at which a sensor is sampled as recited in claims 1 and 11 of the present invention.

Consequently, with regard to the Examiner's proposed combination of references, since there is no suggested desirability within the Persidsky reference to include a timer for determining the particular rate at which a sensor is sampled as recited in claims 1 and 11, there is no motivation to combine the Persidsky reference with either the Amano reference or the O'Conner et al. reference. Claims 1 and 11 are accordingly allowable over the Examiner's obviousness rejection.

Claims 2, 3 and 5-10 and 12, 13 and 15-23

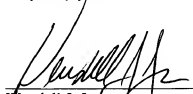
Since claims 2, 3 and 5-10 and 12, 13 and 15-23 are respectively dependent on claims 1 and 11, the above-articulated arguments with regard to claims 1 and 11 apply with equal force to 2, 3 and 5-10 and 12, 13 and 15-23. Accordingly, claims 2, 3 and 5-10 and 12, 13 and 15-23 should be allowed over the Examiner's cited reference.

F. Summary of Arguments

For all the foregoing reasons, it is respectfully submitted that claims 1-3, 5-13 and 15-23 (all the claims presently in the application) are patentable for defining subject matter which would not have been unpatentable under 35 U.S.C. § 103(a) at the time the subject matter was invented. Thus, Appellants respectfully request that the Board reverse the rejection of all the appealed claims and find each of these claims allowable.

This Brief is being submitted in triplicate, and authorization for payment of the required Brief fee is contained in the cover letter for this Brief. Please charge any fee that may be necessary for the continued pendency of this application to Deposit Account No. 08-2025 (Hewlett-Packard Corporation).

Very truly yours,



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IX. APPENDIX

1. An electronic pen for recording motion data relating to use of the pen, comprising:
 - a pen body;
 - a ball mounted in the pen body;
 - a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals;
 - a memory in the pen body, electronically coupled to the sensor, for receiving the electronic signals and storing corresponding data related to the motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball; and
 - a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding electronic signal from the sensor to the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled.
2. The electronic pen of claim 1, further including a removeable ink cartridge, disposed within the pen body, for applying ink to the ball.
3. The electronic pen of claim 1, further including a port, located on the pen body and electronically coupled to the memory, for use in transferring the data from the memory to an external device.
4. Previously canceled.
5. The electronic pen of claim 1 further including a module for receiving the data and for

converting the data into a visual representation of the motion of the ball.

6. The electronic pen of claim 5, further including a module for storing the visual representation.

7. The electronic pen of claim 1, wherein the sensor includes dual sensors for detecting directions from which orthogonal ball motions can be reconstructed.

8. The electronic pen of claim 7, wherein the memory stores as the data coordinates representing the directions from which the orthogonal ball motions can be reconstructed.

9. The electronic pen of claim 1 wherein the memory stores an indication of a set of the motion data and a default location for a start of the corresponding motion.

10. The electronic pen of claim 1 wherein the memory comprises an atomic resolution storage memory.

11. A method for recording motion data relating to use of a pen having a body, a ball mounted in the pen body, a memory, and a sensor located proximate the ball, comprising:

detecting motion of the ball using the sensor; sampling the sensor at a particular rate using a circuit electronically coupled to the sensor and the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled;

converting the motion into corresponding electronic signals;

receiving the electronic signals;

controlling transmission of the electronic signals from the sensor to the memory using the circuit; and

storing in the memory, based upon the electronic signals, corresponding data related to the motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball.

12. The method of claim 11, further including providing a removeable ink cartridge, disposed within the pen body, for applying ink to the ball.
13. The method of claim 11, further including electronically transferring the data from the memory to an external device.
14. Previously canceled.
15. The method of claim 11 further including: receiving the data; converting the data into a visual representation of the motion of the ball.
16. The method of claim 15, further including storing the visual representation.
17. The method of claim 11 wherein the detecting step includes using dual sensors for detecting directions from which orthogonal ball motions can be reconstructed.
18. The method of claim 11 wherein the storing step includes storing as the data coordinates representing the directions from which the orthogonal ball motions can be reconstructed.
19. The method of claim 11 wherein the storing step includes storing an indication of a set of the motion data and a default location for a start of the corresponding motion.
20. The method of claim 11 wherein storing step includes using an atomic resolution storage memory for storing the data.
21. The electronic pen of claim 1, wherein the circuit is capable of varying the rate at which

the sensor is sampled based upon the motion of the ball.

22. The electronic pen of claim 1, further comprising:

a first switch for turning on and off the circuit;

a second switch for enabling a user to store in the memory a reset indication to start storing data related to the motion of the ball from a default location stored in memory; and wherein:

the sensor comprises an X-position sensor and a Y-position sensor located within the pen body proximate the ball, and the X-position sensor and a Y-position sensor remotely sense ball motion by movement of features on the ball; and

the circuit further comprises a timer for determining the particular rate at which the sensor is sampled, and wherein the circuit is capable of varying the rate at which the sensor is sample based upon the motion of the ball.

23. The method of claim 11, further including the step of changing the rate at which the sensor is sampled based upon the motion of the ball.